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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,355	11/20/2001	Terence J. Knowles	13051US02	6243

7590 08/03/2005

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EXAMINER

LAO, LUN YI

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/998,355

Applicant(s)

KNOWLES ET AL.

Examiner

Lao Y Lun

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/9/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-120 is/are pending in the application.
- 4a) Of the above claim(s) 16,43, 71 and 100 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-15, 17-20, 23-42, 44-47, 50-70, 72-76, 79-90, 93-99 and 101-120 is/are rejected.
- 7) ☒ Claim(s) 5,6,21,22,48,49,77,78,91 and 92 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-4, 7-15, 17-20, 23-42, 44-47, 50-70, 72-76, 79-90, 93-99 and 101-120 are provisionally rejected under the judicially created doctrine of obviousness-type

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cavity(10, 12, 14, 16, 30, 32); an acoustic wave transducer(10), the transducer generating an acoustic wave in the substrate that is substantially trapped in the acoustic cavity; a circuit(see figures 5-7) coupled to the transducer and responsive to a change in a characteristic thereof to detect a touch on a touch surface of the acoustic cavity(see figures 1-2, 5-7; column 1, lines 31-68; column 2, lines 1-6; column 3, lines 14-58; column 5, lines 63-68; column 6, lines 1-13; column 7, lines 45-67 and column 8, lines 1-17).

Chatigny et al fail to disclose a substrate with a raised surface(mesa).

Thurn teaches a substrate(4) having a raised surface(3)(see Figure 6 and column 6, lines 36-41). It would have been obvious to have modified Chatigny et al with the teaching of Thurn, so as to produce a high speed sound(see abstract and column 4, lines 10-38).

As to claims 23, 50 and 93, it would have been obvious to mounted a transducer on a center of an acoustic switch, so as to provide equalized acoustic power at a receiver or on the side of acoustic switch.

As to claims 26-33, 53-60, 101-108, the process limitation of how the raised surface is formed has no patentable weight in claim drawn to structure. Note that a □product by process□ claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and In re Marosi et al, 218 USPQ 289, all of which make it clear that it is the

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patentability of the final product per se which must be determined in a \square product by process \square claim, and not the patentability of the process, and that an old or obvious product by a new method is not patentable as a product, whether claimed in \square product by process \square claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear.

As to claims 28, 55, Chatigny et al as modified teach the raised Surface defining the acoustic cavity is formed by adhering at least one material(20, 30) to the substrate to increase the mass of the substrate(see figures 1 and 9).

As to claims 60 and 109, Chatigny et al did not point out a non-transparent material adhering to the substrate. It would have been obvious for piezoelectric polymer element(10) is non-transparent, since it has been within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416.

As to claims 88-90, it would have been obvious to have mesa(10) height is less than 10% thickness of the acoustic cavity since this range would be recognized within the ordinary skill in the art .

As to claim 114, it would have been obvious design choice to make a mesa into a circular shape, since such a modification would have involved a mere change in the shape of mesa. A change in shape is generally recognized as being within the level of ordinary skill in the art.

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5. Claims 19-20, 46-47, 90, 110, 111, 115-116 and 119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chatigny et al(5,673,041) in view of Thurn and Kent(5,986,224).

As to claims 19-20, 46-47, 90, 110, 111, 115-116 and 119, Chatigny et al as modified fail to disclose an acoustic wave is a shear wave and the wave having a hamonic mode of $n \geq 1$.

Kent teaches an acoustic touch panel having a transmit transducer(1301, 1305) for transmitting a shear wave and the wave having a hamonic mode of $n \geq 1$ (see figures 13; column 18, lines 23-39 and column 81, lines 23-30). It would have been obvious to have modified Chatigny et al as modified with the teaching of Kent, since shear waves having the advantage that they weakly couple to liquid and silicon-rubber(see Kent's column 18, lines 30-33).

Allowable Subject Matter

6. Claims 5, 6, 21-22, 48, 49, 77-78 and 91-92 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 1-15,36-38 and 72-86 are allowable if the obviousness-type double patenting rejection is overcome.

Response to Arguments

8. Applicant's arguments filed on May 9, 2005 have been fully considered but they are not persuasive.

Applicants argue that Chatigny nor Thurn teach an acoustic wave cavity defined by a raised area on page 2. The examiner disagrees with that since Chatigny teach the thickness of acoustic wave cavity(10, 12, 14, 16, 30, 32) is greater than a thickness of the substrate(16) in area adjacent the cavity(see figures 1-2 and column 3, lines 13-58) and Thurn teach the thickness of acoustic wave cavity(2-4) is greater than a thickness of the substrate(4) in area adjacent the cavity(see figure 6 and column 6, lines 36-49).

Applicants argue that Thurn does not teach an acoustic switch having a substrate with raised surface defining an acoustic wave cavity on page 3. The examiner disagrees with that since Thurn teach a substrate with raised surface(3) defining an acoustic wave cavity(2-4)(see figure 6 and column 6, lines 36-49).

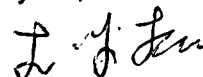
Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 23, 2005



Lun-yi Lao
Primary Examiner